2/2 035 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0127597
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF CREATING CONDITIONS OF PERMANENT SENSITIVITY OF SUPERCOOLED LIQUIDS TO CHARGE PARTICLES BY SETTING UP A CERTAIN TEMPERATURE GRADIENT IN THE LIQUID IS ANALYZED THEORETICALLY. SOME THEORETICAL DEMANDS ON THE GEOMETRICS OF THE SYSTEM, CHOICE OF WORKING LIQUID AND MATERIAL OF THE WALLS AND TOP ARE ESTABLISHED. FORMULAS ARE PRESENTED FOR ESTIMATING THE UPPER AND LOWER TEMPERATURES OF THE SENSITIVITY ZONE. THE WIDTH OF THE LATTER IS DETERMINED. FACILITY: FIZIKO-MATEMATICHESKIY INSTITUT, ROSTOVSKOGO GOSUDARSTVENNOGO UNIVERSITETA.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--STATISTICAL BASIS OF THE KINETIC EVALUATION OF THE EFFECTIVITY OF ANTICANCER INFLUENCES IN THE COURSE OF THE EXPERIMENT -U-

AUTHOR-(04)-EMANUEL, N.M., KUKHARENKO, YU.A., DRONOVA, L.M., YEROKHIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2, PP 224-228

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STATISTIC ANALYSIS, ANTITUMOR DRUG EFFECT, TUMOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0949 STEP NO--UR/0216/70/000/002/0224/0228

CIRC ACCESSION NO--AP0109106

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0109106

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATHEMATICAL BASIS FOR THE CRITERION OF EFFECTIVITY OF ANTITUMOR INFLUENCES AS WELL AS A METHOD OF CONSTRUCTION OF CONFIDENTIAL INTERVALS IN ORDER TO OBTAIN MEAN VALUES REGARDING TWO NORMAL AGGREGATES ARE PROPOSED. THE FORMULAS OBTAINED ARE APPLIED FOR THE ANALYSIS OF EXPERIMENTAL KINETIC CURVES DESCRIBING TUMOR GROWTH. THE RESULTS ARE COMPARED WITH THOSE OBTAINED BY MEANS OF A TRANSFORMATION METHOD PROPOSED EARLIER. THE LIMITS OF APPLICATION OF THE LATTER ARE DISCUSSED. FACILITY: INSTITUTE OF CHEMICAL PHYSICS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

Acc. Nr: AP0047223 D Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, 1970, Nr 1, pp 87-92

Emanuel', N. M.; Dronova, I. M.;
Yerokhin, V. N.; Belich, Ye. I.

INFLUENCE OF SOME ANTITUMOR SUBSTANCES OF A DEVELOPED SCHWEZ ERYTHROMYELOSIS IN RATS

Institute of Chemical Physics, Academy of Sciences, USSR

Regressions of developed subcutaneous tumor in rats suffering from the Schwez erythromyelosis proceeds with the same speed when either eloxene (5 *mg/kg*) or sarcolysine (1 *mg/kg*) are injected on the 4th—7thday after inoculation. A correlation between the variation of the tumor diameter and the erythrocytes number in the blood was shown.

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REEL/FRAME
19790725

USSR

VINOGRADOV, A. V., ZEMLYANUKHINA, N. A., PAVLOVA, I. V., DRONOVA, M. P., and LOPATINA, N. N.

"Correlation of Methods of Determining Aluminum in Beryllium and in its Alloys"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 2, 1973, pp 148-149

Abstract: For the determination of 0.1-30% aluminum in beryllium and in beryllium-aluminum alloys methods are recommended which do not require preliminary separation of these elements. The photometric method with methylthymol blue (MTB) is recommended for concentrations $\geq$ 0.1% Al. Be did not give a colored complex with MTB at pH 3, but in high concentrations Be lowers the optical density of the solution. Complexone-III makes it possible to determine Al in the presence of many elements shielded by the complexone. A verification was made of the effect of Be on the Complexometric determination of Al by means of back titration of complexone excess by a solution of thorium salt with MTB indicator at pH 3 in solutions with Al:Be from 1:1 to 1:20. The examination of the gravimetric method with hydroxyquinoline showed that high concentrations of Be hinder the precipi ation of Al. A comparative evaluation of the three methods on two samples of binary Be-Al alloys revealed that the gravimetric-hydroxyquinoline method is most exact and the photometric method is most rapid. The latter is recommended and its practicability is discussed. One table, nine bibliographic references.
1/1

USSR

UDC: 538.56:621.372.8

VLASOV, B. I., KOTOSONOV, N. V., DRONOVA, V. S., P'YANYKH, Yu. M., Voronezh State University

"Using Metal-Semiconductor Film Structures to Study the Diffraction Fields of Plane Nonhomogeneities in a Waveguide"

Moscow, Izvestiya Vysshykh Uchebnykh Zavedeniy: Radiofizika, Vol 13, No 10, 1970, pp 1532-1540

Abstract: The authors solve the problem of type $H_{0\,1}$ wave diffraction in a rectangular waveguide by a central inductive strip and a metal-semiconductor thin film. It is shown that the diffraction field of the inductive strip is not significantly distorted by introducing a matched multilayered structure. Deviation of the temperature relief patterns from the law of distribution of the induced currents in the absorbing film because of spreading of the thermal field decreases with an increase in the parameter $k = 2\pi/\lambda$ and in the modulation frequency F. A theoretical and experimental basis is given for the possibility of utilizing the distributed matched load method (N. V. Kotosonov, B. I. Vlasov, IVUZ Radiofizika, Vol 11, No 2, p 311 [1968]) with metal-semiconductor thin films for studying diffraction fields in a waveguide.

1/1

Magnesium

USSR UDC 669.721.372

LEBEDEV, O. A., ANTONOV, A. N., MUZHZHAVLEV, K. D., and DRONYAYEVA, O. N.

"Concerning the Mechanism of Magnesium Loss in Electrolysis"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 52-55

Abstract: An investigation was made to determine which of the two following interaction reactions taking place in the electrolysis of carnallite and magnesium chloride determines the magnesium losses: 1) The interaction of dissolved magnesium with dissolved chlorine, or 2) The interaction of Magnesium drops with gaseous chlorine. All tests were carried out with the so-called "potassium" electrolysis of the following composition (wt%): 15 $MgCl_2$, 65 KCl, 19.5 NaCl, and 0.5 NaF prepared from the magnesium chloride from the production of titanium and chemically pure salts. "Chemical" losses were determined according to a method described, with each test being repeated 2 or 3 times. The average results are presented in a table. Some of the tests were conducted in the electrolysis of the same "potassium" content, but with preliminary refining.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710015-3"

USSR

LEBEDEV, O. A., et al, Tsvetnyye Metally, No 10, Oct 70, pp 52-55

A comparison of "chemical" magnesium losses in refined and unrefined electrolysis makes it possible to approximately evaluate the losses caused by contact emission of impurities on magnesium drops, oxidation of dissolved magnesium on the electrolysis surface, and direct burning of magnesium. The experimental procedure and apparatus are described. Thermodynamic data on magnesium-chlorine interaction reactions and magnesium loss balance are given. The highest magnesium losses apparently occur in liquid magnesium-gaseous chlorine interaction.

2/2

USSR

UDC 669.721.472(088.8)

KOSAREV, S. P., MUZHZHAVLEV, K. D., DRONYAYEVA, O. N.

"Method of Thermal Regulation of Magnesium Electrolyzer"

USSR Author's Certificate No 273430, Filed 8/04/68, Published 15/09/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G188 P)

Translation: A method is suggested for thermal regulation of a magnesium electrolyzer by changing the ohmic resistance of the electrolyte in the interelectrode gap. To increase the accuracy of regulation and decrease the dimensions of the electrolyzer, the electrodes are placed relative to each other perpendicular to the direction of the current in the inter-electrode gap. 4 figures.

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JPRS 59068
6-73

3

II-12. STUDY OF THE PROCESS OF OBTAINING GALLIUM ARSENIDE CRYSTALS IN THE $GaAs-Br_2$ SYSTEM

[Article by M. I. Dronyuk, K. S. Shcherbay, S. S. Varshava, L'vov; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 22]

In this paper a quantitative analysis was made of the growth conditions of gallium arsenide crystals in the bromide system. For this purpose a study was made of the equilibrium in the $GaAs-Br_2$ system. The experimental determination of the partial pressures of the gas components in the system was made by measuring the temperature dependence of the total pressure using the quartz zero manometer to a temperature of 1200°K. The data obtained were used to calculate the temperature dependence of the equilibrium constant of the chemical transport reaction.

A theoretical and experimental study was made of mass transport in a closed bromide system, and the relation was established between the morphology of the crystals and the crystallization conditions. The sources of contamination of the grown crystals were investigated. The crystals were inoculated with different admixtures, and a study was made of the effect of the admixtures on the morphology of the crystals and their electrophysical properties.

DRONYUK, M. I.

DRONYUK, M. I.

DRONYUK

SPRS 5986
6-73

V-2. MASS TRANSFER RATE DURING CRYSTALLIZATION IN THE GAS TRANSPORT PROCESSES CONSIDERING HIGH TEMPERATURE GRADIENTS

[Article by M. I. Dronyuk, Yu. G. Akhromenko, L'vov; Novosibirsk, III Simposium po Protsessam Rosta i Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 51]

The modern theories of mass transport during crystallization from the gas phase using chemical transport reactions usually do not take into account the actual nature of the distribution of the thermal field between the source zone and the substrate which under the conditions of high temperature gradients can lead to significant errors. In order to eliminate this deficiency, the Curtiss-Hershfelder equations which describe the diffusion mass transport in the transport system with an arbitrary number of transport reactions and gaseous components taking into account the arbitrary known temperature distribution in the diffusion section were solved. The solution obtained is applicable for analysis of limited diffusion of the mass transport rate in the "sandwich method" and closed systems. An analysis was made of a number of transport systems and the effect of the nature of the temperature field on the mass transfer of silicon and germanium is demonstrated.

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USSR UDC 616.9-036.21]:681.3(476)

KARDASH, I. B., KLIMENKO, Ye. P., DROSDOVA-TIKHOMIROVA, A. A., POLIVODA, Z. M., RUBANOVA, F. G., LEPESHINSKAYA, I. V., RYTIK, P. G., and KNYSH, I. N., Ministry of Health Belorussian SSR, Central Institute of Epidemiology of the Ministry of Health USSR, Belorussian Institute of Epidemiology and Microbiology, and Belorussian Republic Sanitary Epidemiological Station

"Experience Gained in the Belorussian SSR During Introduction of a New Epidemiological Investigation Card Adapted for Processing on IBM Computer Minsk-22"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 124-128

Abstract: A new IBM card with a detachable statistical stub, developed for epidemiological investigations at the Central Institute of Epidemiology, was tested in 1968-1970 in a feasibility study conducted throughout the Belorussian Republic. The project was a success not only because the IBM card is useful and convenient but also because the personnel at district and municipal epidemiological stations had received through advance training in how to fill in the cards and code the stubs. A control staff routinely examined the cards and corrected errors detected in a total of 3.1% of the stubs. Procedural improvements were introduced throughout the 3 year period as dictated by expediency. After each quarter-year, the stubs were checked at the local

USSR

KARDASH, I. B., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 124-128

stations and submitted to the municipal or oblast stations where they were recorded and checked again. Next, they were sent to the Belorrusian Institute of Epidemiology and Microbiology for the third check, and from there to the Computer Center of Belorussia's Central Statistical Administration where the data were transferred on perforated tapes and processed on the computer. The method yielded statistical charts with more accurate and detailed information than was ever available in the past. The method was approved by the Ministry of Health USSR and, in 1970, it was introduced on a permanent basis in epidemiological stations throughout the Belorussian SSR.

USSR

TOPOL'SKIY, N. G., DROVYANNIKOV, A. Ya.

"Method of Optimization of Synthesis of Finite Automata in a Computing Medium"

Vychisl Sistemy [Computer Systems -- Collection of Works], Novosibirsk, No 41, 1971, pp 77-89, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V322).

NO ABSTRACT.

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USSR

SIROTA, N. N., GOSTISHCHEV, V. I., and DROZD, A. A., Institute of Solid State Physics and Semiconductors, Belorussian Academy of Sciences

"Study of Thermoelectromotive Force of Aluminum in Strong Magnetic Fields at Low Temperatures"

Moscow, Pis'ma v ZhETF, Vol 16, No 11, 1972, pp 580-583

Abstract: It is asserted that this is the first paper to be devoted to the effect of magnetic fields on the magnitude, sign, and anisotropy of the thermoelectromotive force in aluminum. Experiments conducted on the effect of a constant magnetic field of intensities of up to 50 kOe on the dependence of the thermoelectromotive force on anisotropy and temperature in aluminum in the temperature range of 5.4 to 79° K are described. The method of the experimentation has been described in earlier papers, among them one by the authors named above in the same journal (16, No 4, p 242, 1972). The object of the experimentation was a monocrystal cut from an ingot and measuring 3X4X60 mm, and the magnitude of the thermoelectromotive force was determined as a ratio to that of lead. Curves of the force as functions of the temperature and the magnetic field intensity are given, as well as a diagram of the force anisotropy.
1/1

SIROTA, N. N., GOSTISHCHEV, V. I., and DROZD, A. A.

"Investigating the Thermal Conductivity of Aluminum at Low Temperatures and in Strong Magnetic Fields"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 16, No 4, 1972, pp 242-245

Abstract: Experimental work designed to study the thermal conductivity of an aluminum monocrystal, cut from an ingot, with an electrical resistance of 1.2 10^{-10} ohms·cm, is described in this letter. The crystal is at a low temperature in the range of 6 to 57° K and is placed in a transverse magnetic field with intensities of up to 50 kilooersteds. Measurements were made by the stationary heat flow method, with the difference in temperature along the specimen generated by two electric heaters attached to its terminals, and the magnetic field was produced by an electromagnet with superconductive windings. Curves are plotted for the thermal conductivity as a function of the temperature and the magnetic field intensity. The authors, affiliated with the Institute of Solid State and Semiconductor Physics of the Belorussian Academy of Sciences, find that the transverse magnetic field has a profound effect on the thermal conductivity of high-purity aluminum.

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USSR

UDC: 546.185

DROZD, G. I., SOKAL'SKIY, M. A., STRUKOV, O. G., and IVIN, S. Z.

"Aminohalofluorophosphorans"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2396-2410

Abstract: The authors investigated the structure, thermal stability and chemical properties of the adducts $R_2NPF_2 \cdot Hlg_2$, $(R_2N)_2 \cdot PF \cdot Hlg_2$ and $R(R_2N)PF \cdot Hlg_2$ (where Hlg = Cl, Br). These compounds are produced by interacting the corresponding fluorides of trivalent phosphorus with chlorine or bromine. In addition, the first two adducts were produced by chlorine treatment of thion derivatives $R_2NP(S)F_2$ and $R(R_2N)P(S)F$ respectively. In many instances, the resultant compounds are resistant to vacuum distillation. NMR and IR spectra indicate a pentacoordination structure (with trigonal-bipyramidal configuration of the molecules) for type $R_2NPF_2 \cdot Hlg_2$ adducts. Spectral data for the other two types of adducts are explained more satisfactorily by an ionic structure $\left[\rangle PFHlg\right]^+ Hlg^-$.

The chlorine or bromine atoms in these compounds may be replaced by fluorine, or by dialkylamino- monoalkylamino- and S-alkyl groups with formation of the

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USSR

DROZD, G. I., et al., Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2396-2410

corresponding fluorophosphorans. Interaction of the adducts with H_2O, carboxylic acid anhydrides and ethylene oxide produces the corresponding fluorides of tetravalent phosphorus.

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USSR

UDC: 546.18

DROZD, G. I.

"Phosphorus Fluorides"

Moscow, Uspekhi Khimii, Vol 39, No 1, Jan 70, pp 3-38

Abstract: The 1965-1968 foreign and Soviet literature on advances in the Chemistry of P-F compounds was reviewed and data on syntheses, chemical properties, and structures of new and some previously known P-F compounds were examined. The review reflects a shift in emphasis of research from four-coordinate to three- and five-coordinate phosphorus compounds, made possible by application of modern physiocochemical methods such as optical and NMR spectroscopy and electron diffraction. Treated in the literature were the trigonal bipyramidal configuration of PF_5, CH_3PF_4, and $(CH_3)_2PF_3$ molecules, confirmed by the above methods, and the complex-forming capability of the three- and five- coordinate phosphorus fluorides. Solution of problems of hybridization and nature of the P-substituent bond in the five-coordinate phosphorus compounds, elucidation of the mechanism of chemical reactions of the coordinate phosphorus compounds and of the interaction between substituents were covered by the studies reviewed.

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USSR

UDC 547.26'118

DROZD, G. I., SOKAL'SKIY, M. A., and IVIN, S. Z.

"Dihalogenfluorophosphoranes Containing RO Groups"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, p 502

Abstract: A previous article by the authors showed that under the action of chlorine or bromine alkyl difluorophosphites undergo an Arbuzov rearrangement, forming $RHlgPOF_2$. It was found that at the initial stage of this interaction unstable alkoxy(aroxy)dihalogendifluorophosphoranes are formed, recorded at low temperatures by P^{31} and F^{19} NMR spectra: $CH_3OPF_2Cl_2$, δ_F 378 ppm (relative to F_2), J_{P-F} 960 cycles/sec; $C_4H_9OPF_2Cl_2$, δ_F 376 ppm, J_{P-F} 910 cycles/sec; $C_6H_5OPF_2Cl_2$, d_4^{20} 1.3870, n_D^{20} 1.4725, δ_F 374 ppm, δ_P 35 ppm, J_{P-F} 1020 cycles/sec; $C_6H_5OPF_2Br_2$, δ_F 345 ppm, δ_P 96 ppm (everywhere rel-

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USSR

DROZD, G. I., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, p 502

ative to H_3PO_4), J_{P-F} 1025 cycles/sec. The pentacovalent structure of the compounds is confirmed by the positive values of the chemical shifts δ_P and the comparatively small values of the constants J_{P-F}.

2/2

Acc. Nr: AP0047662 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0074

100783n Phosphorus fluorides. Drozd, G. I. (USSR). *Usp. Khim.* 1970, 39(1), 3–38 (Russ). A review with 188 refs. through 1968, dealing with P fluorides, their prepn. and properties, and covering principally the period of 1965–8. Reactions of various P compds. contg. F are surveyed, with inclusion of P org. compds. A detailed discussion is given of NMR and ir spectroscopy of P-F compds. G. M. Kosolapoff

REEL/FRAME
19791236

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ADDUCTS OF FLUOROPHOSPHINES WITH HALOGENS -U-

AUTHOR-(02)-DROZD, G.I., SOKALSKIY, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 701-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NMR SPECTRUM, ORGANIC PHOSPHORUS COMPOUND, FLUORINE ISOTOPE, CHLORINE, FLUORINATED ORGANIC COMPOUND, LIGAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0886 STEP NO--UR/0079/70/040/003/0701/0702

CIRC ACCESSION NO--AP0124549
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA WERE USED TO SHOW THAT THE PRIMARY REACTION PRODUCT OF MEPF SUB2 WITH CL IS THE 1:1 ADDUCT, AS IS THE CASE WITH BR AND MEPF SUB2, AND PHPF SUB2 WITH CL AND BR AS WELL. THE NMR SIGNALS CONFIRMED THE PENTACOVALENT STRUCTURE OF THE ADDUCTS WITH TRIGONAL BIPYRAMID GEOMETRY. THE ADDUCTS ARE THERMALLY UNSTABLE AND EVEN AT LESS THAN 0DEGREES TEND TO EXCHANGE LIGANDS TO FORM RPF SUB4 AND CRYST. SOLIDS SUCH AS RPX SUB3 F. WHEN THE PRIMARY ADDUCTS ARE HEATED TO 100-200EGREES A MORE EXTENSIVE DESTRUCTION TAKES PLACE AND HALIDES O P(III) ARE FOUND AMONG THE PRODUCTS. FOLLOWING THE CHANGES IN MEPF SUB2.CLS UB2 BY LOW TEMP. PRIME19 F NMR REVEALED THE FORMATION OF UNSTABLE MEPF SUB3 CL, WHICH WAS CHARACTERIZED THEREBY; AFTER THE SIGNALS FROM THIS DECLINED, THE SIGNALS FROM MEPF SUB4 INCREASED IN INTENSITY, CONFIRMING THE CONVERSION SHOWN ABOVE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DIHALOFLUOROPHOSPHORANES CONTAINING RO GROUPS -U-

AUTHOR-(03)-DROZD, G.I., SOKALSKIY, M.A., IVIN, S.Z.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 502

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, FLUORINATED ORGANIC COMPOUND, NMR SPECTRUM, GLYCOL, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1466 STEP NO--UR/0079/70/040/002/0502/0502

CIRC ACCESSION NO--AP0116903

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0116903
ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. REACTION OF ROPF SUB2 WITH CL OR BR IN FORMING THE PRODUCTS OF THE ARBUZOV REACTION FORMED INITIALLY UNSTABLE ALKOXY (OR ARYLOXY)DIHALODIFLUOROPHOSPHORANES WHICH WERE DETECTED BY NMR SPECTRA TAKEN AT LOW TEMP. THUS WERE DETECTED AND CHARACTERIZED IN TERMS OF CHEM. SHIFTS, PRODUCTS SUCH AS MEOPF SUB2 CL SUB2, PHOPF SUB2 CL SUB2 AND PHOPF SUB2 BR SUB2. THE PENTACOVALENT NATURE OF THESE WAS CONFIRMED BY THE POS. VALUES OF CHEM. SHIFTS (RELATIVE TO H SUB3 PO SUB4) AND SMALL VALUES OF COUPLING CONSTS. J SUBPF MAKING THE AXIAL POSITION OF F ATOMS LIKELY IN TRIGONAL BIPYRAMID STRUCTURES. THE ADDUCTS OF HALOGENS TO (RO) SUB2 PF WERE EVEN LESS STABLE, BUT NMR SPECTRA OF THEM WERE ALSO OBTAINED IF THEY FORMED CYCLIC PHOSPHOLANE RINGS, THESE WERE CHARACTERIZED FOR ESTERS OF ETHYLENE AND PROPYLENE GLYCOLS AND CATECHOL, WITH CL AND BR ADDED.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ELECTROLUMINESCENCE SPECTRA OF LEAD SULFIDE THIN FILMS -U-

AUTHOR-(02)-BUTKEVICH, V.G., CROZD, I.A.

D

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 625-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--ELECTROLUMINESCENCE, LEAD SULFIDE, PHOTOSENSITIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0892 STEP NO--UR/0449/70/004/003/0625/0626

CIRC ACCESSION NO--AP0116402

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0116402
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROLUMINESCENCE SPECTRUM OF A PBS FILM AT 190DEGREESK IS IDENTICAL TO THE PHOTOLUMINESCENCE. THE INTENSITY OF ELECTROLUMINESCENT RADIATION (PHI) DEPENDS ON THE INTENSITY OF THE ELEC. FIELD (E) IN THE FOLLOWING WAY: PHI EQUALS AEXP(BETA E) WHERE BETA APPROXIMATELY EQUAL TO 0.8 TIMES 10 PRIME NEGATIVE3 CM-V. ELECTROLUMINESCENCE IS VITALLY CONNECTED WITH A NONLINEAR V-A RELATION IN PBS. THE PHOTOSENSITIVITY AND PHOTORESISTIVITY OF PBS PREPD. BY PPTN., IS LINEAR UP TO FIELDS OF 10 PRIME4 V-CM WHEREAS PBS FORMED BY DUSTING IN A VACUUM HAS DIFFERENT PROPERTIES. THE DIFFERENCE IS ATTRIBUTED TO THE PRESENCE OF LOCALIZED STRONG FIELDS BETWEEN CRYSTAL LAYERS. THE COND. OF SUCH LAYERS IS SIGNIFICANTLY LOWER THAN THE CONDUCTIVITY OF GRAINS.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002200710015-3"

USSR

DANILIN, V. I., DROZD, M. S., SLAVSKII, Yu. I.

"Use of Specimenless Method of Testing the Mechanical Properties of Steels Under Conditions of Metallurgical Production"

Zavodskaya Laboratoriya, No 2, 1972, p 217-221.

Abstract: Results are presented from an industrial test of the reliability of the method of acceptance testing of the basic mechanical properties of steel on the basis of hardness. It is demonstrated that hardness testing can be used to produce a satisfactory evaluation of the suitability of metal as regards mechanical properties, as determined by the applicable state standard or technical conditions for various types of steels. The results of the hardness tests are judged reliable due to the fact that in almost all cases, those batches of metal judged acceptable on the basis of the hardness tests were also judged acceptable on the basis of more complete mechanical testing of specimens. Specifically, in only three cases of 100 did the results of tensile testing disagree with the results of hardness testing.

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USSR

UDC 539.214;539.374

DROZD, M. S., FEDOROV, A. V.

"Calculation of the Parameters of the Elastic-Plastic Impression of a Sphere"

V sb. Issled. i kontrol' mekhanich. svoystv materialov nerazrushayushch. metodami (Studies and the Control of Mechanical Properties of Materials by Nondestructive Methods -- Collection of Works), Volgograd, 1972, pp 22-25 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V478)

Translation: It is shown that elastic restoration of an impression in the case of an elastic-plastic contact of a sphere with a plane face of a body is determined not only by the contact load, the radius of the sphere and the elastic properties of the material of the contacting bodies (as in the case of purely elastic contact), but also depends on the degree of the development of the plastic deformation (depth of the impression) in the contact zone, i.e., on the hardness of the material being tested.

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USSR

UDC 620.178.152.42

DROZD, M. S., FEDOROV, A. V., and VOLYNOV, A. N., Volgograd Polytechnic Institute

"Determination of Rockwell Hardness of Metals on Specimens with Curved Surface"

Moscow, Zavodskaya Laboratoriya, No 4, 1973, pp 456-459

Abstract: A system developed for measuring Rockwell hardness directly on the curved surface of a specimen is based on the method developed by A. N. Monoshkov et al., (Metallurgiya, No 13, 1971, p 118), for cylindrical surfaces and expanded for the case of curved surfaces when both curvatures are different from zero. A simple formula is derived for the determination of the standard hardness number HRB by the hardness number HRB' measured on the curved surface. The reliability of the formula was experimentally proved on specimens of various materials with convex and concave spherical and cylindrical surfaces. The correlation of standard and calculated HRB values derived in testing spherical and cylindrical surfaces in both cases revealed correlation coefficients of 0.95. Four figures, two tables, seven formulas.

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USSR

UDC 539.214;539.374

DROZD, M. S., TESKER, Ye. I.

"Analytical Determination of the Plastically Deformed Zone Under Penetration of a Sphere into the Cemented Surface of a Steel Plate"

V sb. Issled. i kontrol' mekhanich. svoistv materialov nerazrushayushch. metodami (Investigation and Control of Mechanical Properties of Materials by Nondestructive Methods -- Collection of Works), Volgograd, 1972, pp 39-41 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V447)

Translation: The well-known approximate solution to the problem for finding the depth of the plastic zone in a plate upon penetration of a spherical stamp (based on the use of the Hertz elastic solution and the plasticity conditions for maximum tangential stress) is generalized to a plate with hardness that is variable with depth and consequently with a variable yield point $\sigma_s(z)$. The form of the function $\sigma_s(z)$ as applied to a cemented plate is shown experimentally. G. Ya. Popov.

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USSR

UDC: 539.374

DROZD, M. S. and FEDOROV, A. V.

"Investigating the Depth of a Riveted Layer and the Intensity of Plastic Deformation in an Impressed Spherical Die of Arbitrary Curvature"

V sb. Povysh. prochnosti i dolgovechnosti detaley mashin poverkh-nostn. plastich. deformir. TsNIITMASH, 90 (Improving the Durability and Life of Machine Parts in Surface Plastic Deformation, Central Scientific Research Institute of Heavy Machinery, 90--collection of works) Moscow, 1970, pp 224-233 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8V468)

Translation: Let h be the depth of the residual imprint and d its diameter, D is the diameter of the indentor, h_s is the depth of the riveted layer. It is assumed that for various materials and indentors there is a universal dependence of the ratio h_s/h on d/D. It has the form of $h_s/h = 5.5D/d$. The experimental verification of this formula for various materials and for 10 mm $< D <$ 50 mm has shown good results for static as well as dynamic loading

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USSR

DROZD, M. S. and FEDOROV, A. V., V sb. Povysh. prochnosti i dolgovechnosti detaley mashin poverkhnostn. plastich. deformir. TsNIITMASH, 90, 1970, pp 224-233

under the condition that the shock velocity be no more than 10 m/sec. The error is no more than 10%. It is shown that the magnitude,of d/D is not purely a conditional parameter but is a quantitative characteristic of the intensity of plastic deformation at the center of the spherical imprint.

B. A. Druyanov

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CHOICE OF INDENTOR CONE ANGLE IN TESTING THE MECHANICAL PROPERTIES OF STEELS BY HARDNESS MEASUREMENTS -U-

AUTHOR-(02)-DROZD, M.S., SLAVSKY, YU.I.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB., 1970, 36, (1), 80-84

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MEASUREMENT, STEEL PROPERTY, HARDNESS, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0242 STEP NO--UR/0032/70/036/001/0080/0084

CIRC ACCESSION NO--AP0124004

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0124004
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBLEMS ARISING WHEN MONITORING THE MECHANICAL CHARACTERISTICS OF STEELS BY REF. TO HARDNESS MEASUREMENTS ARE CONSIDERED, WITH SPECIAL REF. TO THE QUESTION OF CHOOSING THE OPTIMUM SEMIVERTICAL ANGLE FOR THE INDENTOR. STRICTLY THESE CHARACTERISTICS MAY BE DETERMINED WITH THE HELP OF AN INDENTOR HAVING ANY ARBITRARY ANGLE; HOWEVER, THERE ARE CERTAIN PRACTICAL ADVANTAGES IN ADHERING TO AN INDENTOR WITH AN ANGLE OF 136DEGREES. IN THIS CASE THE U.T.X., Y.S., AND STANDARD VICKERS HARDNESS UNDER MAY BE DETERMINED WITH A SINGLE INDENTOR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ELECTROCHEMICAL POLISHING OF NONFERROUS METALS -U-

AUTHOR-(03)-MAYTAK, G.P., YUDENKOVA, I.N., DROZD, N.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,092
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, COPPER, BRASS, CORROSION INHIBITOR, ETHANOL, AMINO DERIVATIVE, ELECTROCHEMICAL EFFECT, ELECTROLYTIC METAL POLISHING/(U)P85 CORROSION INHIBITOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1838 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132103

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AA0132103
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NONFERROUS METALS, EG.,CU AND BRASS,. ARE ELECTRO OCHEM. POLISHED IN A ELECTROLYTE OF H SUB3 PO SUB4, H SUB2 SO SUB4, CORROSION INHIBITOR PB,5, AND TRIETHANOLAMINE (5-12 VOL. PERCENT OF THE ACID MIXT.) AT 20-40DEGREES AND 3-75 A-DM PRIME2.
FACILITY: INSTITUT OBSHCHEY I NEORGANICHESKOY KHIMII AN URKAINSKOY SSR.

UNCLASSIFIED

USSR

UDC: 539.5

Drozd, N. P., Ivashchenko, R. K., Maksimovich, G. G., Mil'man, Yu. V., Slenzak, G. Ye., Trefilov, V. I., Kiev-L'vov

"Studies of Stability of the Structure and Mechanical Properties of Molybdenum Under Long-term Temperature and Stress"

Kiev, Problemy Prochnosty, No 4, Apr 72, pp 68-75.

Abstract: The influence of long-term application of temperature and stress on the structural stability and mechanical properties of molybdenum-based low alloys with preliminary formation of cellular structure is studied. It is shown that changes in mechanical properties of deformed molybdenum alloy during annealing under load are determined basically by the annealing temperature, not by the load or holding time at the temperature, within the temperature range studied (800-1000°C). The action of the load during annealing of deformed molybdenum causes no significant increase in temperature of transition to the brittle state. The introduction of dispersed second phase particles allows reliable stabilization of the cellular structure in molybdenum at 1000°C with significant loads over long periods of time. If annealing of deformed molybdenum is performed in the temperature interval in which primary recrystallization occurs, additional application of loads during annealing can slightly increase the recrystallization rate and decrease strength characteristics.

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USSR

UDC: 620.178.38

MAKSIMOVICH, G. G., DROZD, N. P., YANCHISHIN, F. P., and KUDLAK, S. M., Institute of Physico-Mechanics, Academy of Sciences Ukrainian SSR, L'vov

"Effect of Vacuum on the Structure and Certain Mechanical Characteristics of 08kp Steel"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, No 2, 1971, pp 115-118

Abstract: Results are presented of a study of the effect of a vacuum of 10^{-6}, 10^{-5}, and 10^{-3} torr on the structure, hardness, and ductility of 08kp steel subjected to long-term loading at high temperatures (400, 600, and 800° C). The experiments showed that at high temperatures, the ductility of specimens tested under identical conditions at 10^{-6} torr was somewhat greater than at 10^{-3} torr. The hardness of the specimens which did not rupture during the 500 hours of the test at high temperatures under a vacuum of 10^{-6} torr was less than the hardness of specimens tested under the same conditions at 10^{-3} torr. The long-term strength of specimens at high temperatures and 10^{-6} torr decreases similarly. The increased ductility of specimens at high temperatures and high vacuum is explained by the less intensive process of oxidation of specimens. The higher values of hardness and long-term strength at the lower vacuum may result from more significant oxidation of the surface layers of the metal than at 10^{-6} torr.

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Acc. Nr: AP0042048 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: UR 0366

D

89559w Mechanism of Smiles rearrangement of o-methyldiaryl sulfones; rearrangement of diphenylyl mesityl sulfones. Drozd, V. N.; Pak, Kh. A.; Gumenyuk, B. B. (Mosk. Sel'skokhoz. Akad. im. Timiryazeva, Moscow, USSR). *Zh. Org. Khim.* 1970, 6(1), 157–64 (Russ). The treatment of 2,4,6-$Me_3C_6H_2X$ (I) (X is *o*-, *m*-, or *p*-$PhC_6H_4SO_2$) with BuLi or *tert*-BuLi in anhyd. org. solvents under N gave 2,4,6-$Me_3XC_6H_2SO_2H$ (II). When the reaction was arrested ~5 min after the start *cis*-4a,9a-dihydro-5,7-dimethyl-4-phenylthioxanthene 10,10-dioxide (Ia) or *trans*-4a,9a-dihydro-5,7-dimethyl-2-phenylthioxanthene 10,10-dioxide (Ib) were isolated. The stereochem. of Ia and Ib was detd. by NMR spectroscopy and their structures were detd. by synthesis. The mechanism of II formation involves the formation of Ia or Ib cations followed by the intramol. β-elimination of proton, aromatization of A rings, and breaking of 4a–10 bonds. CPJR

REEL/FRAME
19751945

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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MECHANISM OF THE SMILES REARRANGEMENT OF O,METHYL,O(ARYL SULFONES; REVERSIBLE CYCLIZATION OF 2,METHYLOIARYLSULFONE CARBANIONS STUDIED BY A

AUTHOR-(02)-DROZD, V.N., NIKONOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1068-73

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, CHEMICAL REACTION MECHANISM, CYCLIZATION, ORGANOLITHIUM COMPOUND, SULFONE, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1273 STEP NO--UR/0366/70/006/005/1068/1073

CIRC ACCESSION NO--AP0134947

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0134947
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUIL. POSITIONS WERE DETD. BETWEEN RR PRIME1 R PRIME2 C SUB6 H SUB2, SO SUB2 C SUB6 H SUB4 CH SUB2 LI,2(R, R PRIME1, R PRIME2 ARE H OR ME) AND THE CORRESPONDING CARBANIONS OF DIHYDROTHIOXANTHENE 10,10,DIOXIDE BY UV SPECTROSCOPY. THE EQUIL. POSITION DEPENDS ON THE ABILITY OF THE RR PRIME1 R PRIME2 C SUB6 H SUB2 NUCLEUS TO ACCEPT A NEUCLEOPHILIC SUBSTITUENT AND ON THE NUCLEOPHILIC STRENGTH OF THE LITHIOBENZYL GROUP. FACILITY: MOSK. SEL'SKOKHOZ. AKAD. IM. TIMIRYAZEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--MECHANISM OF THE SMILES REARRANGEMENT OF O,METHYLDIARYL SULFONES; EFFECT OF STRUCTURAL FACTORS AND REACTION CONDITIONS ON THE MECHANISM OF

AUTHOR-(02)-DROZD, V.N., PAK, KH.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 818-25

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ARYL RADICAL, SULFONE, INTRAMOLECULAR MECHANICS, CHEMICAL REACTION MECHANISM, METHYLENE, NAPHTHALENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1950 STEP NO--UR/0366/70/006/004/0818/0825

CIRC ACCESSION NO--AP0125539

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125539
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF BULI TO A SOLN. OF 2,ETC SUB6 H SUB4 SO SUB2 C SUB6 H SUB2 ME SUB3 2,4,6, IN ET SUB2 O GAVE 4A,9A,DIHYDRO,5,7,DIMETHYL,4,ETHYLTHIOXANTHENE 10,10,DIOXIDE CARBANION (I) WHICH WAS CONVERTED BY STORAGE AT ROOM TEMP. TO 2,ETC SUB6 H SUB4 CH SUB2 C SUB6 H SUB2 ME SUB2 (SO SUB2 H),3,5,2. THE ADDN. OF WATER TO I GAVE CIS,4A,9A,DIHYDRO,5,7,DIMETHYL,4,ETHYLTHIOXANTHENE 10,10,DIOXIDE WHICH WAS CONVERTED BY BROMINATION DEHYDROBROMINATION TO 2,4,DIMETHYL,5,ETHYLTHIOXANTHENE 10,10,DIOXIDE. THE MECHANISM OF THE ABOVE REACTIONS IS THE SAME AS THAT FOR OTHER LESS SUBSTITUTED DIARYL SULFONES. THE SMILES REARRANGEMENT OF ALPHA OR BETA NAPHTHYL MESITYL SULFONE PROCEEDS BY THE DIRECT REPLACEMENT OF THE SO SUB2 GROUP WITH A CH SUB2 GROUP CONTRARY TO THE OPINION OF OTHER AUTHORS (W. E. TRUCE, ET AL., 1966). FACILITY: MOSK. SEL'SKOKHOZ. AKAD. IM. TIMIRYAZEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--MECHANISM OF THE SMILES REARRANGEMENT OF O,METHYL,DIARYL SULFONES; DUALITY OF THE REARRANGEMENT MECHANISM. REVERSIBLE CYCLIZATION OF

AUTHOR-(03)-DROZD, V.N., NIKONOVA, L.A., TSELYEVA, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 825-33

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SULFONE, INTRAMOLECULAR MECHANICS, CYCLIZATION, SULFINIC ACID, ANION, BENZENE DERIVATIVE, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2096 STEP NO--UR/0366/70/006/004/0825/0833

CIRC ACCESSION NO--AP0125680

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125680
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYCLIZATION OF PHSO SUB2 C SUB6 H SUB4 ME,O TO DIHYDROTHIOXANTHENE 10,10,DIOXIDE ANION IS A REVERSIBLE REACTION. IN THE CASE OF MORE SUBSTITUTED SULFONES SUCH AS PHSO SUB2 C SUB6 HME SUB4,2,3,5,6, THE CYCLIZATION TO 4A,9A,DIHYDRO,5,6,8,TRIMETHYLTHIOXANTHENE 10,10,DIOXIDE IS NOT REVERSIBLE. THE SMILES REARRANGEMENT OF THESE SULFONES TO SULFINIC ACID ANIONS PROCEEDS THROUGH THIOXANTHENE ANIONS WHICH MAY EITHER OPEN DIRECTLY OR FORM A SPIRO ANION FROM WHICH THE FINAL PRODUCT (SUCH AS PHCH SUB2 C SUB6 HSO SUB2 PRIME NEGATIVE O IS FORMED. FACILITY: MOSK. SEL'SKOKHOZ. AKAD. IM. TIMIRYAZEVA, MOSCOW, USSR.

UNCLASSIFIED

DROZD, V.P.

UDC 669.017.3:620.186.5

STRUCTURAL RECRYSTALLIZATION OF STEELS DURING FAST AND SLOW HEATING

G. N. Bogachova, V. P. Drozd, A. V. Ozhmegov, V. M. Schastlivtsev, and V. M. Umova, Institute of the Physics of Metals, UNTs of the USSR Academy of Sciences, submitted to press 1 February 1972 pages 1198-1205

The effect of small additions of elements forming carbides that are nearly insoluble, the temperature of preliminary hardening, tempering after hardening, and soaking at various temperatures in the austenite region on the structural mechanism of the recrystallization of steel during heating, accomplished with various speeds, was investigated. It was demonstrated that the factors indicated do not have the same effect on the manifestation of the structural succession, expressed in the restoration of the initial grains of austenite after completion of the phase transformation in fast heating (200--400° per second) and slow heating (1--2° per minute). In connection with this it is proposed that these two cases of structural succession are caused by different mechanisms of the formation of austenite.

At definite heating conditions of a preliminarily superheated and hardened steel, the phenomenon of structural succession is observed, which lies in the presence of a crystallographic bond of the grains of austenite formed after completion of the phase transformation with the initial grains of austenite, which existed before the first hardening. The structural succession is manifested most sharply at very fast or at very slow heating of the hardened steel: in both cases, a restoration of the initial grains of austenite occurs with respect to magnitude and with respect to crystallographic orientation [1--3].

In reference [4] the assumption was expressed that the phenomenon of structural succession is caused by the well-ordered mechanism of the formation of austenite: in fast heating a diffusionless mechanism is realized, and in slow heating the so-called homogeneous mechanism of diffusion formation of austenite. However, according to [5], for the majority of the steels investigated at the speeds of heating that can be accomplished in practice, the formation of austenite occurs by the diffusion mechanism. This conclusion, in essence, presumes the identity of recrystallization mechanisms of the grain in both cases. It is of interest to analyze the effect of various factors on the appearance of the structural sequence in fast and slow heating and, if their effect is unambiguous, according to [4], we may assume that these two cases of structural sequence are caused, all the same, by various mechanisms of the formation of austenite.

In this article the effect of the chemical composition, preliminary hardening temperature, tempering after preliminary hardening, and the regimes of congealing in the austenite region before preliminary hardening on the structure picture of the recrystallization in repeated heating of the hardened steel.

Industrial steels were investigated, the composition of which is indicated in the table. Some experiments were conducted on steels with an increased content of carbon. Repeated heating after preliminary hardening was accomplished at rates of 1--2° per minute (slow heating) and 200--400° per second (fast heating). Since the results of x-ray structural and metallographic methods in this case agree well [6, 7], only the metallographic method was used.

USSR

UDC 624.21.093

DROZD, YA. I., Honored Worker in Science and Technology; PASTUSHKOV, G. P., LOBANOV, A. T., Candidates of Technical Sciences

"33-Meter Diaphragmless Bridge Beam of Prestressed Algophorite Concrete"

Moscow, Beton i zhelezobeton, No. 12, Dec 71, pp 13-15

Abstract: A study of the use of prestressed algophorite concrete in highway bridges connected by the Belorussian Polytechnical Institute in conjunction with the Main Administration of Highways under the Council of Ministers BSSR is described. A bridge beam without diaphragms of length 33 m was designed and fabricated for a G-7 span structure. The span structure was designed for loads of N-30 and NK-80. The following composition was used per cubic meter of concrete: type 500 portland cement 480 kg, quartz sand (M-2.59) 575 kg, algophorite rubble with a fraction 5-20 mm satisfying requirements of GOST 11991-66, 658 kg and water 192 l. The tests showed that algophorite concrete can be used successfully to produce reliable bearing structures. A correct calculation of the three-dimensional operation of elements of a spanning structure and replacement of heavy concrete with algophorite concrete produced significant economies: the mass of the beams was reduced by 21.9% and the number of high-strength reinforcement rods was reduced by 21.8%. The rating of the concrete could be lowered from 400 to 350. The same formulas as for heavy concrete can be used to calculate these elements for strength in terms of normal cross sections.

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Acc. Nr.: AR0113852

Ref. Code: UR0000

USSR

UDC: 622.73: 553.31

BELETSKIY, Ye. P., DROZD, Yu. D.

"Results of Pulverizability, Opening and Convertibility of Sintered Ore of the Kuznets (?) Central Mining and Concentration Combine in Grinding Mills"

Obogashcheniye Poleznykh Iskopayemykh. Respublikanskiy Mezhvedomstvennyy Nauchno-Tekhnicheskiy Sbornik (Concentration of Useful Minerals. Republic Interdepartmental Scientific and Technical Collection of Works), No 4, 1969, pp 3-7 (from Referativnyy Zhurnal, Metallurgiya, No 1, 1970, Abstract No 1V76)

Translation: Results of laboratory research are cited concerning the pulverizability, opening and concentrability of sintered ore of the Central Mining and Concentration Combine in the case of ore-pebble and ball grinding mills. From the sintered ore of the Central Mining and Concentration Combine, a concentrate has been obtained with a content of Fe 64% with pebble

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19931029

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Acc. Nr.: AR0113852

pulverization to the size of 90-93% of the class 0.074 mm; for obtaining the same quality of concentrate with ball pulverization, a finer grind is necessary. Ore-pebble pulverization involves losses in tailings 1.1-1.4% less than in ball pulverization, and extracts 2-2.3% more Fe in the concentrate. The opening of ore minerals with this method of grinding is higher (a 3.5-10% higher yield of ore grains). The specific productivity of the mill with respect to the newly formed class reached its maximum for a 48-50% coefficient of filling. The content of solid material when the mill was unloaded comprised 70%. The technological advantages of ore-pebble pulverization of sintered ore over the ball method are made apparent.

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Reel/Frame
19931030

USSR

UDC 621.726.2

VOLYNSKIY, V. V., ANTIPIN, L. N., MANSKIY, Ye. G., DROZDENKO, V. A., and CHUB, V. Ya.

"An Investigation of the Cathode Process In Obtaining Titanium Powders of Increased Purity"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 81-85

Translation: The effect of the concentration of lower titanium compounds, cathode density of the current, and the material of the sub-layer on the course of the cathode process when obtaining titanium powders with a high degree of purity by the electrolyte method is studied. The mechanism of the electrode reaction with different content of trivalent titanium in the electrolyte is considered. The greatest effect on the purity of the titanium powder obtained is exerted by the concentration of $TiCl_2$ in the electrolyte. Technological conditions of electrolysis are selected which make it possible to obtain powder of the assigned granulometric composition with a 99.9% content of the primary metal. Four illustrations, one table, and ten bibliographic entries.

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USSR

UDC 669.295:621.762

USTINOV, V. S., OLESOV, YU. G., ANTIPIN, L. N., and DROZDENKO, V. A.

"Powder Metallurgy of Titanium"

Moscow, Poroshkovaya Metallurgiya, Titana, Izd-vo Metallurgiya, 1973, 248 pp

Translation of Introduction: Accelerated scientific and technical progress requires the creation of materials which satisfy the most diverse requirements of consumers. The methods of powder metallurgy are beginning to occupy an ever increasing place in the creation of such materials. In its time powder metallurgy has played a decisive role in the development of titanium production: the first finished products of titanium were produced by the methods of powder metallurgy. Later, because of the sharp increase in the quality of the metallothermic titanium sponge and the introduction of a vacuum-arc smelting technique, practically all semi-finished and finished products have begun to be manufactured from cast metal. This was also due to the fact that titanium was basically used in special branches of technology where the determining factors were guaranteed high mechanical and physical properties of the finished products, and questions of cost played a secondary role. Recently the powder metallurgy of titanium has received increasingly broader application in many branches of the national economy. The simplicity of the

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USTINOV, V. S., et al., Poroshkovaya Metallurgiya Titana, Izd-vo Metallurgiya, 1973, 148 pp

technological scheme of this production, the possibility of a broad mechanization and automation of the processes, and the sharp increase in the output of suitable products all make powder metallurgy economically feasible, especially if we take into account the relatively high cost of titanium and the familiar difficulties involved in the question of treating waste. The development of powder metallurgy of titanium is associated with the necessity of organizing the production of powders which in their quality would satisfy the growing requirements of consumers and have a relatively low cost. The properties of titanium powders vary in significant ranges as a function of the method used to produce them. At the present time we are familiar with a rather large number of variations in the technological schemes for producing titanium powders (1). The basic ones are electrolysis of melts with a soluble anode from the titanium waste, grinding of solid titanium, and metallothermic reduction of titanium compounds and have been introduced on an experimental-industrialscale; they make it possible to produce titanium powders and its
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USTINOV, V. S., et al., Poroshkovaya Metallurgiya Titana, Izd-vo Metallurgiya, 1973, 248 pp

alloys which have been successfully tested by a number of consumers. The quality of the titanium powders plays a special role in the production of semi-finished and finished products from them with properties that are comparable to finished products produced from cast titanium. In this case a slight increase in the cost of the powders is often economically justified. For example, by the use of electrolytic powders that are more expensive than sponge titanium, an industrial technology has been created for the production of a number of structural parts using the methods of powder metallurgy. In this case the savings per 1 ton of finished products is 8-12 thousand rubles, with a cost for the electrolytic powder that is twice the cost for titanium sponge of higher grandes (2). A number of finished products on a titanium base may be produced only by the methods of power metallurgy; highly porous bodies, titanium-metalloid systems, several alloys on a titanium base, etcetera. Recently a new, effective method has appeared for the manufacture of materials by rolling or extrusion of the original powder batch, as a result of which we can economically manufacture such products as sheets, wire, pipes, and other titanium semi-finished products by omitting the operations of smelting the metal, casting the billets, and their subsequent treatment. For example, the

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USTINOV, V. S., et al., Poroshkovaya Metallurgiya Titana, Izd-vo Metallurgiya, 1973, 248 pp

production of an additional electrode material for the welding of titanium may be accomplished by the extrusion of titanium powders with significant simplification of the technology, increase in the quality of the electrodes and reduction in their cost as compared with the manufacture by ordinary methods (3). Thus, power metallurgy of titanium is becoming one of the important directions in the development of the titanium industry. This monograph critically examines the domestic and foreign research work in the field of producing titanium powders and alloys on its base; the features and degree of perfection of the technology according to the different methods are taken into account.

The authors express their appreciation to Professor A. B. SUCHKOV, Doctor of Technical Sciences, who made a number of valuable critical comments in reviewing the manuscript, and we shall be grateful to the readers who will express their own wishes and comments.

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USSR

USTINOV, V. S., et al., Poroshkovaya Metallurgiya Titana, Izd-vo Metallurgiya, 1973, 248 pp

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Chapter Four. Electrolytic Production of Titanium Powders. 75

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USTINOV, V. S., et al., Poroshkovaya Metallurgiya Titana, Izd-vo Metallurgiya, 1973, 248 pp

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USSR

ustinov, v. s., et al., Poroshkovaya Metallurgiya Titana, Izd-vo Metallurgiya, 1973 248 pp

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USSR

UDC 669.295.054.79

ANTIPIN, L. N., DROZDENKO, V. A., KOYGUSHSKIY, N. N., OLESOV, Yu. G., USTINOV, V. S., ZAPADNYA, V. I., VOLYNSKIY, V. V., and KALUZHSKAYA, E. L.

"The Technology for Obtaining Powders by the Electrolysis Method for Liquid Metals With a Soluble Anode"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 85-89

Translation: A technological chart for producing powders of titanium and its alloys by the electrolysis method with a soluble anode is worked out. Opitmal technological conditions for obtaining powders by electrolysis are selected. The chart has been adopted for introduction. The titanium powders obtained do not differ, in impurity content, from the best grades of titanium sponge. The effect of electrolyte temperature on the qualities of the metal obtained and the chlorine content in it are studied. The metal obtained is undergoing testing by users. Two illustrations, two tables, and two bibliographic entries.

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USSR

UDC 621.762.2

ANTIPIN, L. N., DROZDENKO, V. A., KOYGUSHSKIY, N. N., OLESOV, YU. G., USTINOV, V. S., ZAPADNYA, V. I., VOLYNSKIY, V. V., and KALUSHSKAYA, E. L.

"Technology of Production of Powders by Electrolysis of Melts With Soluble Anode"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, pp. 85-89, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G456 by the authors).

Translation: A technological plan is developed for the production of Ti and titanium alloy powders by electrolysis with a soluble anode. The optimal technological mode is selected for electrolytic powder production. The plan has been accepted for use. The Ti powders produced are equal in impurity content to the best types of Ti sponge. The influence of electrolyte temperature on properties of the Ti produced and on content of Cl is studied. The Ti produced has passed consumers' tests. 2 figures; 2 tables.

1/1

Powder Metallurgy

USSR

UDC 621.762.8

ORDAN'YAN, S. S., and DROZDETSKAYA, G. V., Leningrad Technological Institute imeni Lensovet

"Effect of the Method of Preparation of Samples From TiC and ZrC on Their High-Temperature Properties"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 70, pp 63-67

Abstract: A study was made of the strength of samples of different porosity made from TiC and ZrC in the temperature interval 300-3000°K. The presence of "peak" strength is shown at 0.6-0.7 melting temperature, the appearance of which is related to the transition of the materials above the 0.5 melting temperature to the viscous-brittle state. The effect of the method of sample production from TiC and ZrC on their mechanical properties was established. At identical porosity the strength of slip-cast samples was 30% higher than that of pressure cast samples. Therefore, wider use of the slip-casting method in powder metallurgy is recommended.

1/1

USSR

UDC 611.85:523

MARKARYAN, S. S., SIDEL'NIKOV, I. A., PAVLOV, G. I., DROZDOBA, N. T., and STEPANOV, V. K.

"Effect of Vestibular Stimulation During Hypoxia on Some Physiological Reactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1973, pp 33-36

Abstract: The main purpose of the study was to determine whether moderate hypoxia can be used to detect latent vestibulo-autonomic instability in airplane pilots and astronauts. On the assumption that tolerance for cumulative Coriolis accelerations lasting at least 2 minutes is a good criterion of vestibular function, 242 healthy subjects were exposed to hypoxia either by remaining in a pressure chamber at an "altitude" of 5000 m or breathing a gaseous mixture with a low oxygen content and then rotated in a special chair. The results of the test revealed vestibular instability (4th degree) in 24% of the nonfliers, 12% of the flight school candidates, and 6% of the fliers. Other effects of the combined action of hypoxia and Coriolis accelerations included a marked decrease in the cardiac output, increase in the minute volume of respiration, and diminished visual acuity in the sensitive individuals.
1/1

USSR

UDC 621.376.55

DROZDOV, R. V., Institute of Automation and Remote Control (Technical Cybernetics)

"A Demodulator for Unidirectional Pulse-Position Modulated Signals"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285069, class 21, filed 24 Dec 68, published 29 Oct 70, pp 46-47

Translation: This Author's Certificate introduces a demodulator for unidirectional pulse-position modulated signals. The unit contains a gating pulse oscillator, and a series circuit comprised of a flip-flop, sawtooth voltage generator, and memory device controlled by a switch whose input is connected to the output of a coincidence circuit. As a distinguishing feature of the patent, the device is designed for improved precision in demodulating a continuously modulating function. The signal from the output of the flip-flop is sent simultaneously to the coincidence circuit and to the gating pulse oscillator. The output of the gating pulse oscillator is connected to the second input of the coincidence circuit and to the input of the output clamper, whose second input is connected to the output of the above-mentioned memory device.

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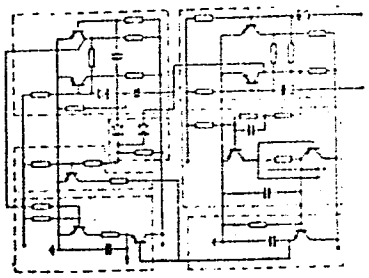
USSR

DROZDOV, B. V., Otkrytiya, izobreteniye, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285069, class 21, filed 24 Dec 68, published 29 Oct 70, pp 46-47



2/2

1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--HYPERTENSIVE DRUGS AGAINST HYPOXIA IN PATIENTS WITH HYPERTENSIVE DISEASE -U-

AUTHOR-(03)-ZANOZDRA, N.S., DROZDOV, D.G., KOZINTSEVA, P.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 1-5

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIHYPERTENSIVE AGENT, HYPERTENSION, HYPOXIA, BLOOD CHEMISTRY, OXYGEN, METABOLISM, HEPARIN, RESERPINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1724 STEP NO--UR/0475/70/000/005/0001/0005

CIRC ACCESSION NO--AP0129092
UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSICN NO--AP0129092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE GASEOUS CONTENT OF THE BLOOD IN 198 PATIENTS WITH HYPERTENSIVE DISEASE REVEALED SIGNS OF HYPOXIA IN THE MAJORITY OF THESE PATIENTS. TREATMENT WITH RESERPINE, ISMELIN, AMINAZINE, HYPOTHIAZIDE, ISMELIN PLUS THIAZIDES, HEPARIN AND HEPARIN PLUS RESERPINE RESULTED IN AN INCREASE OF OXYGEN SATURATION OF THE ARTERIAL BLOOD AND AN IMPROVEMENT OF TISSUE OXYGEN METABOLISM, AS EVIDENCED BY THE DYNAMICS OF BLOOD VAKATOXYGEN. FACILITY: KIYEVSKOGO NAUCHNO-ISSLED. INSTITUTA KLINICHESKOY MEDITSKINY IM. AKAD. N. D. STRAZHESKO.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SOME HEMODYNAMIC DATA IN HYPERTENSIVE PATIENTS DURING AMINAZINE TREATMENT -U-
AUTHOR--DROZDOV, D.D.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 110-111

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMODYNAMICS, HYPERTENSION, BLOOD PRESSURE, BLOOD VOLUME, NERVOUS SYSTEM DRUG, GANGLIONIC BLOCKING AGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0977 STEP NO--UR/0475/70/000/003/0110/0111

CIRC ACCESSION NO--AP0102916
UNCLASSIFIED

CIRC ACCESSION NO--AP0102916

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPROVEMENT IS REPORTED OF CERTAIN HEMODYNAMIC FINDINGS IN HYPERTENSIVE PATIENTS UNDER THE EFFECT OF TREATMENT WITH AMINAZINE. A TENDENCY TO NORMALIZATION HAS BEEN FOUND OF THE ARTERIAL PRESSURE, MEAN DYNAMIC ARTERIAL PRESSURE, VENOUS PRESSURE; THE TOTAL PERIPHERIC RESISTANCE TENDED TO DECREASE AND THE BLOOD FLOW VELOCITY TO INCREASE. THE MINUTE BLOOD VOLUME DID NOT CHANGE IN THE COURSE OF TREATMENT.

USSR

UDC: 621.96-→621.91/95

LACHUGIN, F. S., and DROZDOV, G. D.

"Briquetting the Wastes of High-Quality Steels and Alloys"

Moscow, Kuznechno-shtampovochnoye proizvodstvo, No. 5, 1971, p 46

Abstract: The wastes in question are the residue of the process of cutting rods of such refractory nickel alloys as EI437B and EI698 on anode-mechanical machines. This short article describes the process developed by the authors for briquetting the powdered waste in a thin-walled metal container; the description is quite detailed. It is stated that the metal thus obtained can be used as an alloying ingredient in the production of steels and nickel-based metals. The assistance of M. V. POLYAKOV, and M. V. ALESHINA is acknowledged.

1/1

USSR

UDC 621.762.2.001:669.3

AKSENOV, G. I., LOGVINOV, A. N., and DROZDOV, I. A.

"High-Temperature Metallographic Study of the Cracking Process During the Reduction of Cupric Oxide"

V sb. Novyye napravleniya razvitiya vysokotemperatur. metallogr. (New Trends in the Development of High-Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye" (Machine-Building), 1971, pp 148-151 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G238 by authors)

Translation of Abstract: The article describes the use of the methods of high-temperature metallography to study the peculiarities in the change of the surface of Cu scale reduced in H_2 at various temperatures (from 500 to 800°). The formation of a network of cracks in the Cu is due to the consequences of volume changes as a result of structural transformations occurring during Cu scale reduction and the concomitant formation of the metallic phase. Crack initiation is accelerated with a rise in the rate at which diffusion processes take place. Cne illustration. Bibliography with three titles.

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USSR

UDC 621.762.5.001

AKSENOV, G. I., LOGVINOV, A. N., and DROZDOV, I. A.

"Analysis of the Kinetics of Compacting Copper Metal Powders During Sintering in the Free-Fill State"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 3-8 (from RZh-metallurgiya, No 3, Mar 71, Abstract No 3G344 by I. Brokhin)

Translation: A study is made of the kinetics of the compacting process during the sintering of freely filled copper powders (electrolytic and hydrogen-reduced at 250 and 500°). Copper powder was sintered in a dissociated NH_3 atmosphere at 900, 950, 1000, and 1050° with varying holding times. Powder density was determined before and after sintering. The compacting of specimens is due to diffusion processes whose activation energy and rate depend on the defectiveness of the crystal lattice and the development of spcific surface. The diffusion coefficient for electrolytic copper power and for that reduced at a low temperature is more than one order to magnitude higher than for copper powder reduced at a high temperature. The values of the diffusion coefficient for powders of the first type are close to the

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USSR

AKSENOV, G. I., et al., Tr. Kuybyshev. aviats. in-t, 1970, vyp. 42, pp 3-8

coefficient of surface diffusion of copper, which indicates the great part played by surface diffusion in the compacting process of freely filled powders. Four illustrations. Two tables.

2/2

Acc. Nr. AP0049305 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR 0226

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103086y High-temperature metallographic investigation of the sintering of reduced copper powders. Aksenov, G. I.; Logvinov, A. N.; Drozdov, I. A. (Kuibyshev. Aviats. Inst., Kuibyshev, USSR). *Poroshk. Met.* 1970, 10(1), 45–51 (Russ). By using high-temp. metallography, the sintering of metallic reduced Cu powders was studied. The temp. range between the nucleation and the growth of the metallic contact between the powder particles depends on their redn. temp. On the basis of the data on the growth of the contacts, the coeffs. of the surface self-diffusion and the activation energy are quant. detd. The effective surface self-diffusion coeff. of the low-temp. reduced Cu powder is 1 order of magnitude higher than for the Cu powder reduced at a high temp. The effective activation energy value for the growth of the contacts between the reduced powders of Cu does not remain const., but is dependent on the sintering temp. With increasing sintering temp. the effective activation energy value increases due to the increase in the degree of equil. of the structure of the surface layers of the powders.

S. A. Mersol

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REEL/FRAME
19801122

18

DROZDOV, O.A.

JPRS 58133
2 Nov 73

- 23 -

A number of characteristics of the meteorological elements can sometimes be obtained only, the exact state of the meteorological elements can sometimes be obtained

With respect to the object of study, climatology is a part of meteorology and, at the same time, a partially geographic discipline. The method of investigation in climatology is primarily statistical for which it is possible exhaustively to consider all aspects of the meteorological conditions. This does not exclude physical analysis. Moreover, without understanding the physics of the processes, the application of statistical methods in meteorology cannot be effective.

Climatology is studying the effect of geographic factors on the meteorological conditions of a specific territory. Usually this effect is exhibited quite clearly only for a quite prolonged time which with the empirical approach forces one of only long observations series to characterize the climate. It is not at all necessary, when determining the climate of a wheat field a defined point. For example, when determining the climate of a wheat field it is necessary each year to select different fields on which the wheat is grown in this time, but it is understandable that they must all be arranged quite closely and under uniform climatic and geographic conditions.

The importance of all areas of climatologic forecasting to the national economy of our country and the principal achievements in this area are demonstrated.

1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PROBLEMS OF MOUNTAIN CLIMATOLOGY, THEIR APPLIED IMPORTANCE AND WAYS OF SOLUTION -U-
AUTHOR--DAVITAYA, F.F., DROZDOV, O.A.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 4, PP 59-71

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--CLIMATOLOGY, MOUNTAIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1039 STEP NO--UR/0050/70/000/004/0059/0071

CIRC ACCESSION NO--AP0104437
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104437

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRINCIPAL REGULARITIES OF CLIMATE FORMATION IN MOUNTAIN REGIONS ARE CONSIDERED. MOST IMPORTNAT PROBLEMS OF MOUNTAIN CLIMATOLOGY ARE DETERMINED; SOLUTION OF THESE PROBLEMS IS OF PARAMOUNT IMPORTANCE FOR THE DEVELOPMENT OF AGRICULTURE, CONSTRUCTION OF RESORTS AND SANATORIUMS, TOURISM AND MOUNTAINEERING, WATER POWER, COMPLEX MASTERING OF MOUNTAIN TERRITORIES: WAYS FOR THE SOLUTION OF THESE PROBLEMS ARE DRAWN UP.

UNCLASSIFIED

USSR

UDC: 669.017:539.37

KOLACHEV, B. A., GORSHKOV, YU. V., MAL'KOV, A. V., SEDOV, V. I., and DROZDOV, P. D., Moscow

"The Effect of Hydrogen on the Breakdown Strength of the OT4 and OT4-1 Grades of Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 73, pp 102-107

Abstract: The authors study the effect of hydrogen on the critical coefficient of the intensity of stresses on the OT4 and OT4-1 titanium alloys during the testing of specimens with fatigue cracks for static console bending. This type of testing shows the susceptibility of sheet titanium materials to brittle fracture. The results show that the breakdown strength for the OT4 and OT4-1 alloys is somewhat increased at a hydrogen concentration in the order of 0.008-0.012 percent and then falls. The magnitude of the coefficient of stress intensity is not a constant of the material, but depends on a series of factors including hydrogen content in the alloy and the work time under load. The micro-breakdown mechanism changes as hydrogen content rises. Micro-cracks appear in the specimen during the formation and interaction of twins in the plastic deformation process up to a hydrogen content in the order of 0.01 percent for OT4-1 and 0.012 percent for OT4. Further increase in hydrogen concentration results in the realization of a new mechanism: splitting of the beta phases

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KOLACHEV, V. A., et al, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 73, pp 102-107

and the formation of micro-cracks on the alpha-beta phase boundary division. The mechanism takes effect at hydrogen concentrations greater than 0.015 percent. The micro-breakdown mechanism affects the basic stages of micro-crack growth which ultimately is reflected in the ductility of the material.

2/2

USSR

UDC 681.326.75

SOLONCHUK, V. A., NOSOV, YE. N., DROZDOV, P. I.

"Device for Monitoring the Elements of Automatic Control Systems"

USSR Author's Certificate No 304587, filed 12 Jan 70, published 7 Jul 71 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A550P)

Translation: A device is proposed for monitoring the elements of automatic control systems. The device is redundant with respect to an odd number of elements. It contains a level selector connected to the outputs of the monitored elements and comparison circuits the first inputs of which are connected to the outputs of the corresponding monitored elements and the second inputs of which are connected to the output of the level selector. To increase the monitoring reliability, each comparison circuit is executed, for example, from a magnetic amplifier and it is encompassed by a positive feedback circuit containing a circuit with a variable magnitude of the dead zone the control input of which is connected to the output of the level selector.

1/1

DROZDOV, S. A.

JPRS 55123

7 February 1972

UDC 536.63

EFFECT OF INHERENT HEAT CAPACITY OF THIN-FILM DETECTORS IN PULSE MEASUREMENTS

[Article by S. A. Drozdov, D. F. Saleckiy, and G. G. Spirin, Moscow, Zhurnal Fizicheskoy Khimii, Russian, Vol 9, No 6, November-December 1971, submitted 2 July 1971, pp 1327-1329]

In recent times, in many physical investigations, methods based on the use of pulsed initial heating of film thermal detectors (such as, for example, in the determination of the thermophysical properties of substances [references 1, 2]) have come to be used. The small thicknesses and heat capacity of the resistive element make it possible to bring the duration of the current pulses up to 100 microseconds, thus reducing the time required for an individual measurement. Further decrease in the pulse duration may lead to a considerable expansion of the field of applicability of the methods, but, however, this is associated with the appearance of errors caused by the effect of the inherent heat capacity of the sensing elements in the measuring process. Usually this effect is ignored, which essentially simplifies the theoretical prerequisites of the method, but, as will be demonstrated below, this is not always valid.

For an estimate of the effects of the inherent heat capacity of the metal film of the pickup, we will consider the following model: a plane metallic film of thickness l is placed at the interface of two non-conducting media, having thermophysical characteristics that are independent of temperature. The thermal effect of a rectangular current pulse through the film will be identified with the effect of heat sources of an intensity q/l distributed throughout its thickness. For clarity and simplicity in further calculations we will limit ourselves to a case when one of the media has a much lower thermal conductivity than the other. Then we will consider that the heat flux into the medium with a lower thermal conductivity is equal to zero. Such a situation is realized when, for example, a metallic film, applied on a dielectric base, makes contact with the air. Assuming that the thermal effect begins at a moment of time $t=0$, the equation, the boundary conditions, and the initial conditions for the temperature field may be written thus:

USSR UDC 621. 315. 592:621.383.51

DROZDOV, V.A., KURMASHOV, SH.D., MISHENKO, M.T.

"Photocurrent Of Heterojunction With Long-Time Relaxation Of Space Charge"

Elektron. tekhnika. Nauchno-tekhn. sb. Upr. kachestvom i standartiz. (Electronic Technology. Scientific-Technical Collection. Quality Control And Standardization), 1970, No 4, pp 45-49 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B252)

Translation: The effect was investigated of long-time relaxation of the space charge of a p-Cu_2O-n-CdSe heterojunction on the magnitude of the barrier-layer photocurrent. An expression is derived for the current of a short circuit generated during illumination of heterophotocells by light which is strongly absorbable in the Cu_2O. A satisfactory agreement of the computed and experimental data is displayed (with specific assumptions). 2 ill. 2 ref. Summary.

1/1

Acc. Nr. AP0053426 Abstracting Service: CHEMICAL ABST. Ref. Code: 4R0059

110619c Acid-base properties of alkyl(aryl)fluorosilanes in nonaqueous media. Drozdov, V. A.; Kreshkov, A. P.; Romanova, A. D. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 104–9 (Russ). Conventional syntheses gave the following: Me_2EtSiF, b. 51°, d^{20} —, n_D^{20} — (n_D^{15} 1.3570); Me_2PrSiF, b. 77°, —, 1.3708; Me_2PhSiF, b. 155–7°, —, 1.5471; $(PhCH_2)SiMe_2F$, b_{28} 104°, 0.9743, 1.4838; $MeEt(PhCH_2)SiF$, b. 200–2°, 0.9663, 1.4792; $MePh(PhCH_2)SiF$, b. 117°, 1.0610, 1.5481; $MePh_2SiF$, b_{15} 164.5°, 1.077, 1.5482; Et_3SiF, b. 109–10°, 0.8392, 1.3906; Et_2PhSiF, b_9 77–8°, 0.9837, 1.4880; $Et_2(PhCH_2)SiF$, b_{25} 96°, 0.9828, 1.4942; $PhSiFCl_2$, b. 157–9°, —, 1.5293; Ph_2SiFCl, b_{10} 131–2°, —, 1.5471; $MePhSiF_2$, b_4 108–10°, 1.2000, 1.5339; $PhSiF_2Cl$, b. 129–30°, —, 1.4575; $PhSiF_3$, b. 102–3°, 1.2270, 1.4106; and $PhSiCl_3$, b_{100} 225°, 1.2220, 1.5821; also: $MePh_2SiCl$, b_{15} 191°; $MePhSiCl_2$, b_{60} 223–5°; $MePh(PhCH_2)SiCl$, b. 149°; $Me_2PhSiCl$, b. 190–1°; and $Et_2PhSiCl$, b_9 100–2°. Ir spectral curves of 12 of these were shown and their thermodynamic acidity was detd. by potentiometric titrn. in dry MeOH and EtOH relative to dry HCl in the same solvents. The relative values of such acidity expressed in units of pK (—SiR_3) were, in MeOH and EtOH, resp.: Et_3SiF, 10.9, 10.0; $MeEt(PhCH_2)SiF$ 10.2, 9.56; Me_2PhSiF 9.55, 9.14; $MePh(PhCH_2)SiF$, 9.29, 8.80; and Me_3SiF, 10.43, 9.69. Unlike chlorosilanes, the substituent groups had considerable effect on the acidity of the fluorosilanes. This is ascribed to the low polarizability of these. G. M. Kosolapoff

REEL/FRAME
19830451

AA0038813

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-76

238133 WELDING PLASTICS is based on maintaining an interelectrode gap which varies according to cosine law. Due to wave-type propagation of the h.f. energy, and on account of forming standing electromagnetic waves in the material the voltage across the capacitor and the field intensity are a function of the gap. 27.4.66. as 1072314/25-27, KOVAL'CHUK, V.A. et al. New Structural Materials Res. Inst. (1.7.69.) Bul. 9/20.2.69. Class 39a^2 Int. Cl. B 29c.

LD 1

AUTHORS: Koval'chuk, V. A.; Drozdov, V. M.; and Dolgopolov, N. N.

Vsesoyuznyy Nauchno - Issledovatel'skiy Institut Novykh Stroitel'nykh Materialov

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19740023

USSR UDC 681.3

DROZDOV, Ye. A.

"Analysis and Synthesis of Combination Adders with Group Carry Circuits"

Tsifr. Vychisl. Tekhnika i Programmir. [Digital Computer Equipment and Programming -- Collection of Works], No 6, Moscow, Sovetskoye Radio Press, 1971, pp 136-149, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V579 by the author).

Translation: The structures of combination adders with group carry circuits are studied; finite analytic dependences are produced for all the basic structures, allowing a quantitative evaluation of their characteristics of speed and apparatus composition to be performed. The necessity and principle of considering values of the input factor of the elements used in analysis and synthesis of combination adders are shown.

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1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--METHOD FOR THE WEAR TESTING OF MATERIALS DURING DRY FRICTION USING RADIOACTIVE ISOTOPES -U-

AUTHOR-(03)-DROZDOV, YU.N., PUCHKOV, V.N., SILIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(3), 345-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RADIOACTIVE ISOTOPE, CYCLOTRON, FRICTION, WEAR RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1052 STEP NO--UR/0032/70/036/003/0345/0346

CIRC ACCESSION NO--AP0123045

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123045

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SAMPLE IS 1ST ACTIVATED BY RHO (6-7 MEV) IN A CYCLOTRON, AND AFTER THE FRICTION OPERATION ITS RADIOACTIVITY IS MEASURED AND COMPARED WITH THE RADIOACTIVITY OF A MODEL SAMPLE OF KNOWN DEPTH OF WEAR. FACILITY: GOS. NII MASHINOVED., USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--FRICTION AND EFFICIENCY OF GEARS IN A VACUUM -U-

AUTHOR-(02)-DROZDOV, YU.N., PAVLOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 7-9

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--GEAR, MATHEMATIC EXPRESSION, FRICTION COEFFICIENT, MODEL, VACUUM TECHNOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1880 STEP NO--UR/0122/70/000/002/0007/0009

CIRC ACCESSION NO--AP0130707

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130707

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FRICTION CHARACTERISITCS OF SOLID BODIES IN A VACUUM ARE DEMONSTRATED. FORMULAS ARE GIVEN FOR CALCULATING THE EFFICIENCY FO DRY GEARS. THE COEFFICIENTS OF FRICTION FOR THE GEAR MATERIALS WERE DETERMINED ON A VACUUM ROLLER STAND. FRICTION IN GEARING CONTACT IS STUDIED USING DIMENSIONAL ANALYSIS. THIS MAKES IT POSSIBLE TO DETERMINE THE RELATIONSHIPS BETWEEN THE RELATIVE PARAMETERS OF THE ROLLER MODEL AND A FULL SCALE UNIT. FULFULLMENT OF THESE RELATIONSHIPS ON THE MODEL MAKES IT POSSIBLE TO USE EXPERIMENTAL RESULTS IN CALCULATING GEAR EFFICIENCY.

UNCLASSIFIED

UDC 548.736

USSR

GOLOVACHEV, V. P., DROZDOV, Yu. N., KUZ'MIN, E. A., and BELOV, N. V., Academician, Gor'kiy Physicotechnical Institute at Gor'kiy State University imeni N. I. Lobachevskiy

"Crystalline Structure of Fenaksite $FeNaK[Si_4O_{10}]$ ($KNaFe[Si_4O_{10}]$)"

Moscow, Doklady Akademii Nauk SSSR, Vol. 194, No. 4, 1 Oct 70, pp 818-820

Abstract: A structural study was made of the Khibinskiy mineral fenaksite- K, Na, Fe-silicate- discovered in 1959 by M. D. Dorfman. The initial model of fenaksite structure was obtained from an analysis of the three-dimensional Patterson function. Seven peaks of the Patterson function were used and it was possible to distinguish a basic system containing 11 peaks, but they could not be identified on the basis of the Patterson function. The final values for all 51 position parameters are given in the Table:

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GOLOVACHEV, V. P., et al., Doklady Akademii Nauk SSSR, Vol 194, No 4, 1 Oct 70, pp 818-820

Atoms	x/a	y/b	z/c	Atoms	x/a	y/b	z/c
K	0,140	0,809	0,010	O_3	0,632	0,424	0,197
Na	0,525	0,270	0,410	O_1	0,431	0,838	0,286
Fe	0,040	0,209	0,407	O_5	0,791	0,798	0,220
Si_1	0,669	0,913	0,213	O_9	0,780	0,139	0,280
Si_2	0,230	0,631	0,270	O_7	0,033	0,629	0,205
Si_3	0,390	0,304	0,131	O_4	0,175	0,589	0,118
Si_4	0,803	0,632	0,273	O_6	0,760	0,655	0,436
O_1	0,630	0,856	0,041	O_{10}	0,251	0,192	0,237
O_2	0,204	0,457	0,133				

Figures are given showing the crystalline structure of fenaksite in polyhedra; the basic architectural component of the structure was a tubular silicon-oxygen radical $[Si_5O_{20}]_\infty$ of a new type. Similar tubular radicals were observed in narsarsukite in 1960 and in kanasite in 1969.

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DROZDOVA, A.A.

medicine

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PREREQUISITES FOR DEVELOPING A RATIONAL SYSTEM OF CATHERING AND PROCESSING EPIDEMIOLOGICAL INFORMATION

(all medicine)

[Article by Professor A.A. Sumarokov, candidates of medical sciences A.V. Pavlov, V.L. Lelikov and B.Ya. Teplyakov; Yu.A. Burgasov, A.A. Drozdova, Central Institute of Epidemiology, USSR Ministry of Health; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 12, 1971, submitted 14 June 1971, pp 45-50]

As a result of the technological revolution some extremely complex electronic devices have been developed which are in wide use in different industrial processes for the purpose of freeing to a maximum both muscular and analytical activities of man. Obviously, interest is increasing daily with regard to the use of electronic transmitting and computer devices in different areas of industry. The utmost efficiency of computers requires first of all that an orderly logical method be created for gathering, transmitting, and processing the appropriate information which is the basis of rational organization and effective management of production systems in general and of the system of epidemiological service to the people in particular.

The wide adoption of diverse electronic instruments and devices in production processes to optimize the latter has made it necessary to develop automatic control theory, the main concepts of which are, in turn, used to develop problems of management of so-called large systems; the system of epidemiological service may be included in the latter.

One of the chief issues determining development of a system of large system management is its structure. The structure of the sanitary and epidemiological service in our country consists of five elements: rayon, municipal (for cities with division into rayons), oblast (kray), republic, and Union. With the exception of the first element (which is managed but does not manage) which provides for the gathering of primary information (detection of cases of infectious disease and initiation of the appropriate preventive and epidemic control measures), the functions of the other four are similar but on different scales.

They consist of summarizing and analyzing epidemiological information, then transmitting it by the principle of direct communication and feedback, monitoring organization and performance of effective and prompt preventive and epidemic control measures by subordinate structural elements, methodological and

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"Centralized Processing of Materials on Infectious Diseases"

Minsk, Zdravookhraneniye Belorussii, No 6, 1970, pp 66-67

Abstract: The organization of data requires centralized processing of properly classified information which may be suitable for machine processing. For this purpose, a new chart was prepared by the Central Institute of Epidemiology, designed for epidemiological studies and provided with a separate sheet containing 18 points considered essential for centralized processing. At the seminars attended by all epidemiologists, their aides, and all others working with infectious diseases, the various difficulties concerning the particular items in the new chart were resolved. Putting these new charts through the Minsk-22 computer proved accurate, reliable, and time-saving.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS SUBSTANTIATE THE NECESSITY OF IMPROVEMENT OF EFFECTIVE INFORMATION ON THE IINCIDENCE OF INFECTIOUS DISEASES WITH THE APPLICATION OF MODERN MEANS OF COMMUNICATION AND ELECTRON COMPUTERS. PRACTICAL POSSIBILITY OF COLLECTION AND TRANSMISSION OF EFFECTIVE INFORMATION BY TELETYPE WAS SHOWN.

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TEPLYAKOV, B. Ya., DROZDOVA, A. A., and YELKIN, I. I., Central Institute of Epidemiology

"Toward a Rational System for Prompt Transmission of Information on the Incidence of Infectious Diseases"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 141-146

Abstract: The slow and inefficient system used in the USSR for reporting cases of infectious diseases is contrasted with that prevailing in the United States, and a successful experiment they conducted in 1968 to speed up the collection and transmission of information via telegraph and teletype is described. Ten-day and monthly reports in coded form on the incidence of typhoid, dysentery, infectious hepatitis, diphtheria, and seven other diseases were submitted by rayon (and city) and oblast sanitary epidemiological stations 2 or 3 and 5 or 6 days, respectively, after the report period to the appropriate agencies. Analysis of the results revealed comparatively few discrepancies between the ten-day and monthly reports, and a small number of garbles and distortions due to mechanical failure and telegrapher errors. Most of the discrepancies were caused by diseases that present some diagnostic difficulties (typhoid, para-typhoid, dysentery).

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DROZDOVA, V. M. meteor.

J. Air and Precipitation Chemistry

J-7 ON THE CONTENT OF MICROELEMENTS IN PRECIPITATION

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Developments in the investigation of precipitation chemistry are concerned with increasing the number of ingredients determined and with improving the sensitivity of analysis methods. Determination of microelements is of considerable interest. Microelements are such elements in precipitation, the concentration of which is 2 to 3 orders of magnitude lower than that of the main components usually determined.

The highly sensitive method of spectral analysis and various methods of concentrating samples were used for the determination of microelements in precipitation samples.

A general indication of the microelements present in monthly samples of precipitation was obtained by qualitative and semi-quantitative methods of spectral analysis. Investigations carried out showed a wide variety of elements in precipitation.

The content of several individual elements - lead, nickel and manganese - was determined with a high degree of accuracy in a large number of samples. Their concentration is in the range from 0.003 to 0.060 mg/l.

ABSTRACTS
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